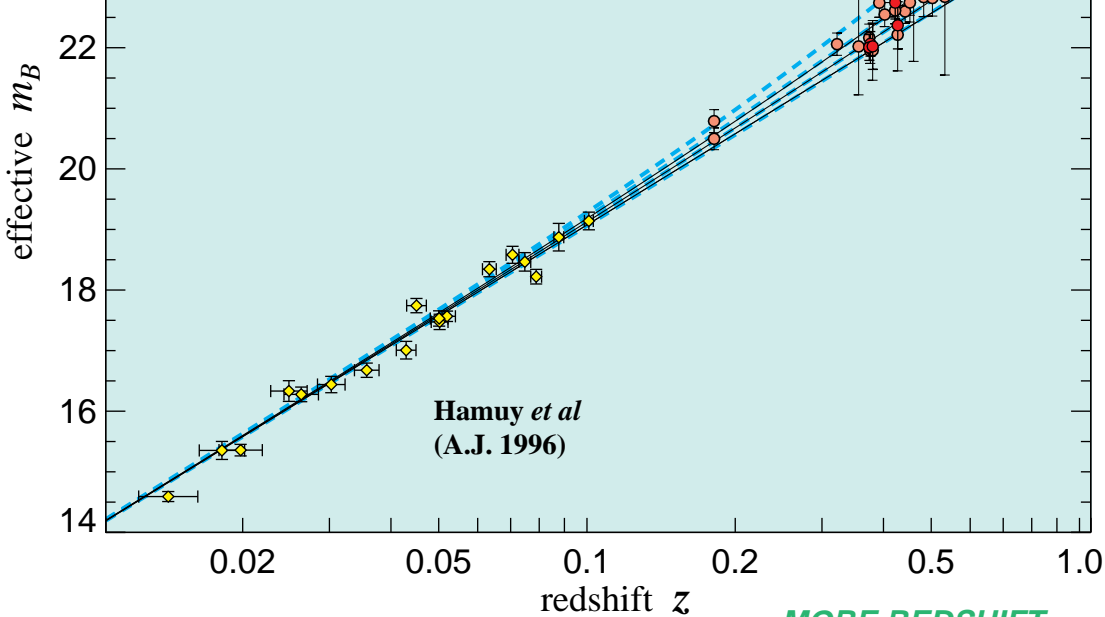


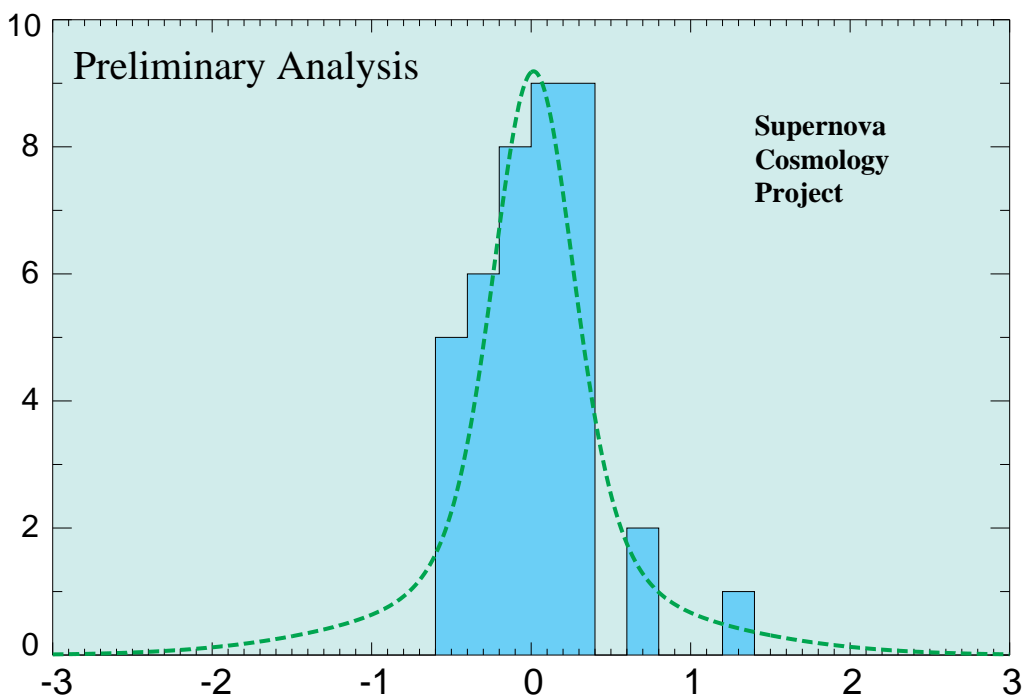
FAINT  
(Farther)  
(Further)



**MORE REDSHIFT**   
(More total expansion of universe  
since the supernova explosion)

Corresponding  $\Omega_M$   
at  $z = 0.5$   
in a flat universe

1 .8 .4 .2 0 -.2



Residual (in Magnitudes) from  
Best Flat-Universe Fit (at  $\Omega_M = 0.25$ )

 **Brighter than best fit** **Fainter than best fit** 

The Hubble diagram with the data from the supernovae already published (Perlmutter *et al*, *Ap.J.*, 1997, with the supernovae at  $z \sim 0.4$ , and Perlmutter *et al.*, *Nature*, 1998, with the supernova at  $z = 0.83$ ) shown as dark red circles with black outlines, and the next 35 supernovae shown as lighter red circles. The four dashed blue curves show the locus expected for a flat universe for four values of  $\Omega_M$  (listed at right), and the three solid black curves are for a  $\Lambda = 0$  universe. The lower plot is a histogram of residuals from the best fit values:

**Flat universe:**  $\Omega_M = 0.25 [\pm 0.06 \text{ statistical}] [\pm 0.3 \text{ systematic}]$